

CLAIMS

1. A photoelectric encoder having a telecentric optical system in which a first lens and an aperture located at a focal position of the first lens are interposed between a main scale and a photoreceptor, and

wherein at least a second lens is interposed between the aperture and the photoreceptor with a focus of the second lens on the aperture, thereby constituting a bilateral telecentric optical system.

2. The photoelectric encoder according to claim 1, wherein the second lens is made identical to the first lens and is situated reversely.

3. The photoelectric encoder according to claim 1 or 2, wherein at least either one of the first lens and the second lens is made of a ball lens.

4. The photoelectric encoder according to claim 1 or 2, wherein at least either one of the first lens and the second lens is made of a GRIN lens.

5. The photoelectric encoder according to claim 1 or 2, wherein at least either one of the first lens and the second lens is made of a drum lens.

6. The photoelectric encoder according to any of claims 1 to 5, wherein one or more second bilateral telecentric optical systems including a second aperture and third and fourth lenses arranged on both sides thereof is/are further

interposed between the second lens and the photoreceptor.

7. The photoelectric encoder according to any of claims 1 to 6, wherein the aperture is formed as a slit oblong in a direction perpendicular to an axis of measurement.